



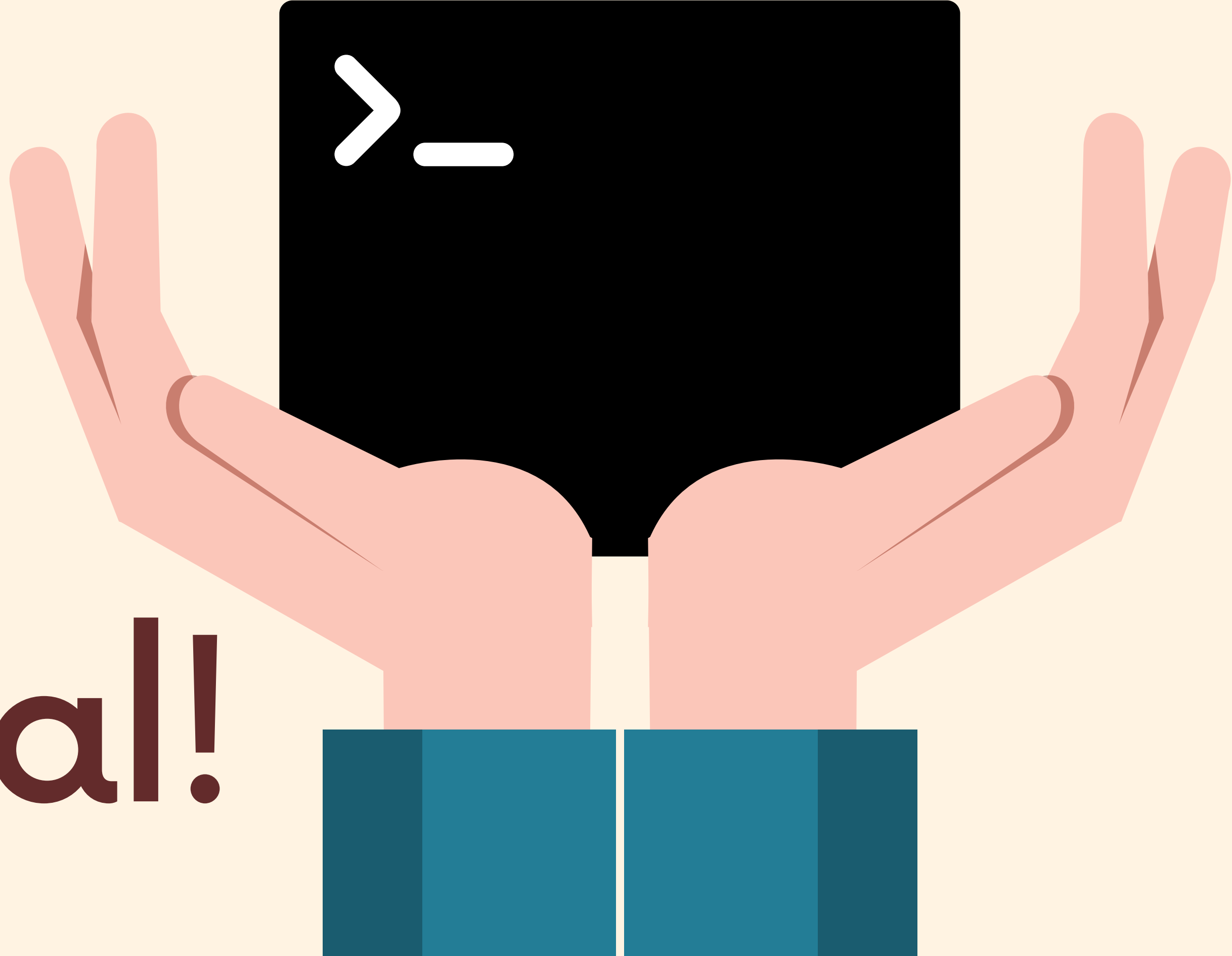




# Command Basics

Step 1:

Open  
Terminal!





# The Prompt

When we open up our terminal, we'll see our prompt which will likely include your `username@machinename`, followed by a `~` and then a dollar sign. We'll learn how to change the prompt later on.

This prompt is what we'll see whenever the shell is ready to accept new input. **All we need to do is type some commands and hit enter.**

If we try typing some gibberish and hit enter, the shell attempts to find a command with that name before telling us "command not found".

```
colt@linux~$
```

```
>jakshdbd  
command not found
```



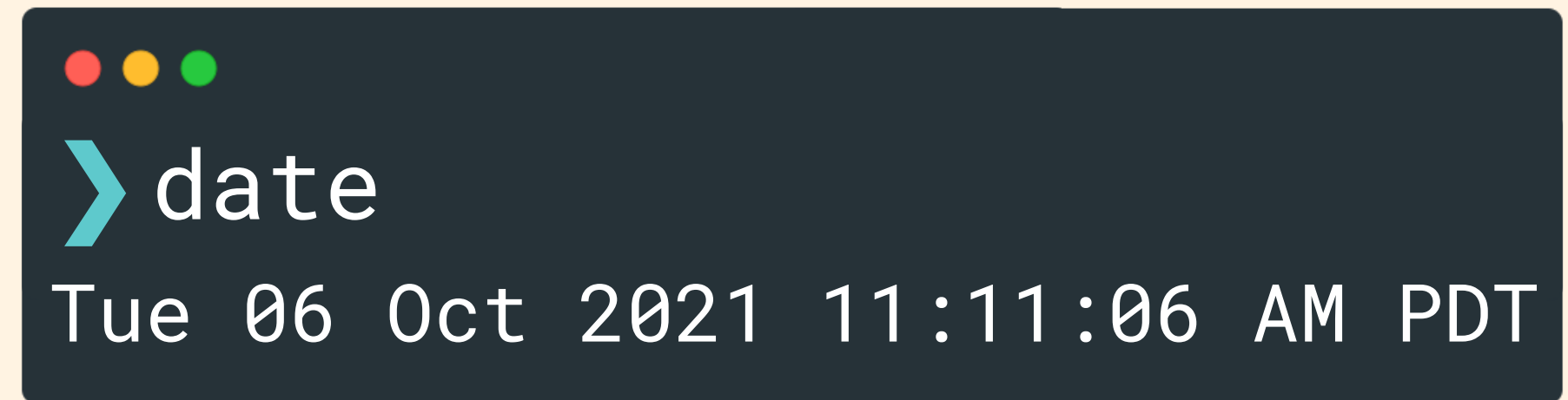




# Our First Command!

The date command may not be the most useful command of all time, but it's a great place to start.

Try typing `date` and then hit enter. You should see the current date printed out!



```
> date  
Tue 06 Oct 2021 11:11:06 AM PDT
```



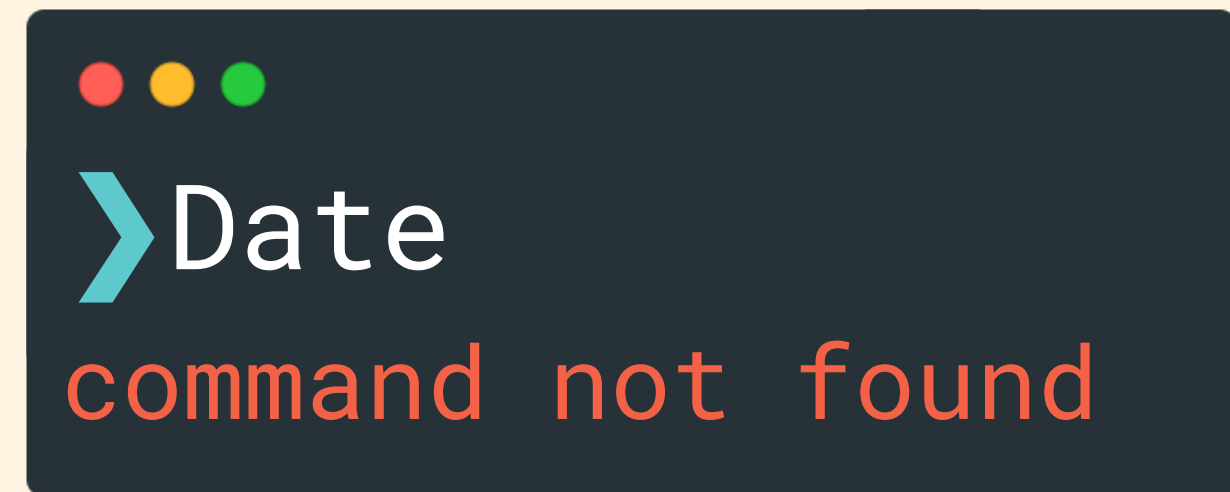




# Case Matters!

Commands are case sensitive, so **Date** is NOT the same thing as **date**.

\* If you're using OS X, some commands are not case sensitive, but others are. It's safest to assume all commands are case sensitive.

A dark-themed terminal window with three colored window control buttons (red, yellow, green) in the top-left corner. It shows a command prompt with a blue chevron followed by the word 'Date' in white. Below this, the text 'command not found' is displayed in red.

```
>Date  
command not found
```







# Another Simple Command

Try typing `ncal` into your prompt. Hit enter and you should see the current month's calendar printed out.

`ncal` stands for "new cal". There is also a "cal" command that does the same exact thing, but `ncal` adds some fancier functionality.

```
ncal
      October 2021
Su      3 10 17 24 31
Mo      4 11 18 25
Tu      5 12 19 26
We      6 13 20 27
Th      7 14 21 28
Fr      1  8 15 22 29
Sa      2  9 16 23 30
```

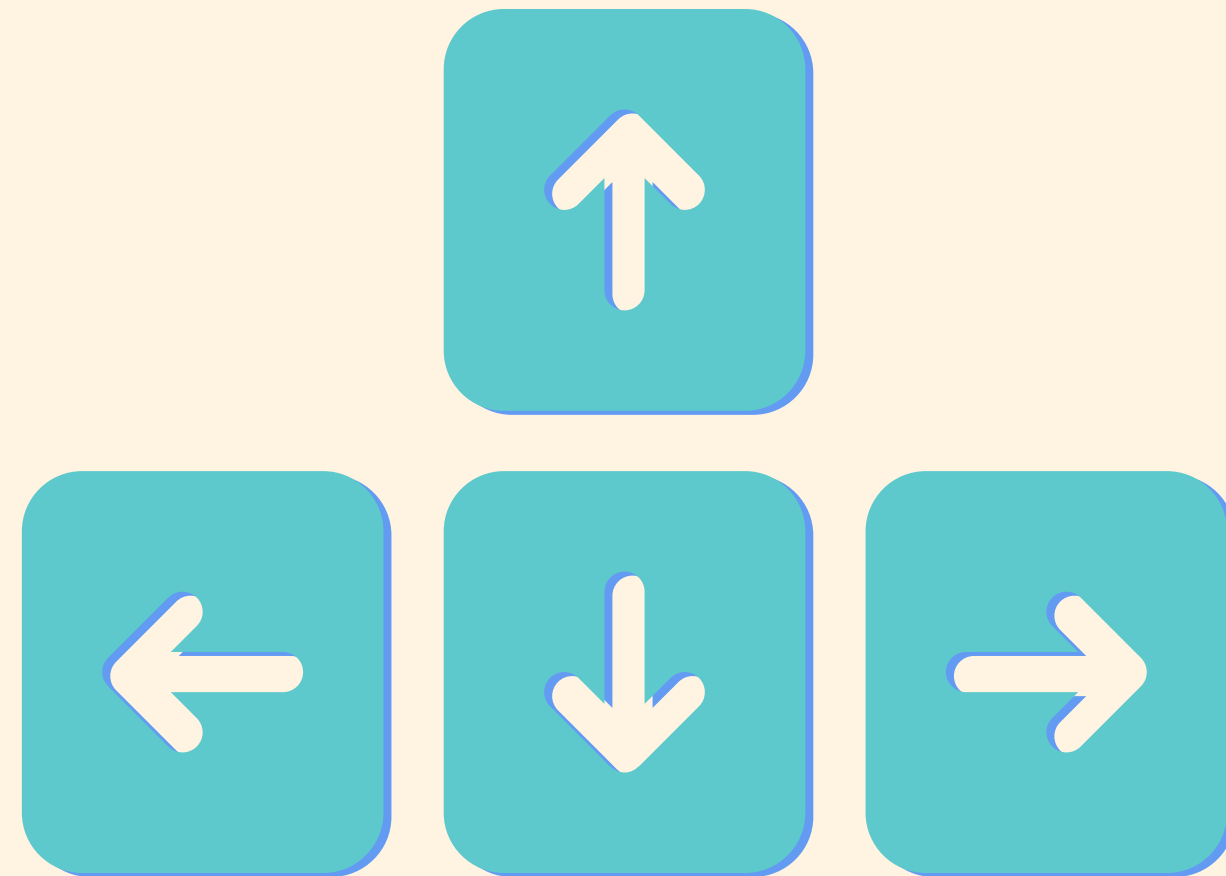




# Use The Arrow Keys

In the terminal, we can use the left and right arrow keys to move through a line of text, one character at a time.

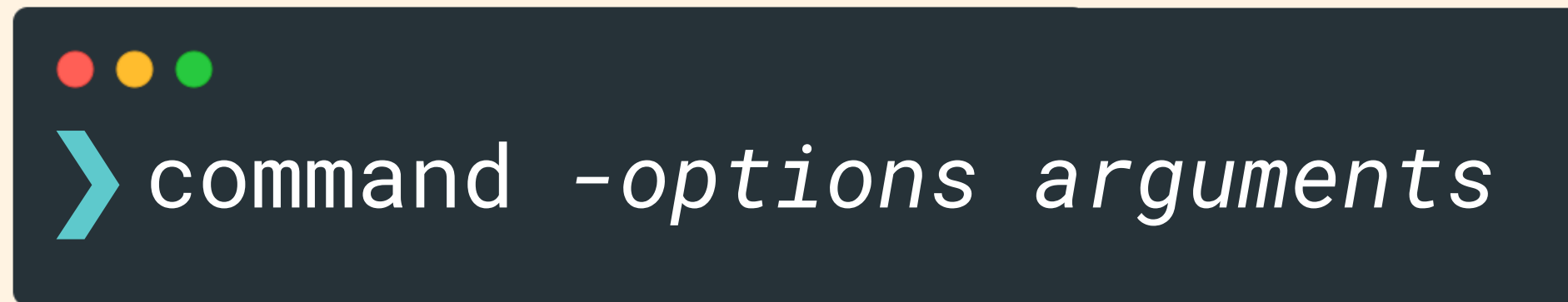
Use the up arrow to access previously entered commands, which can save you tons on typing!







# Command Structure



Most commands support multiple **options** that modify their behavior. We can decide which options to include, if any, when we execute a command.

Similarly, many commands accept arguments (the things that the command acts upon or uses)

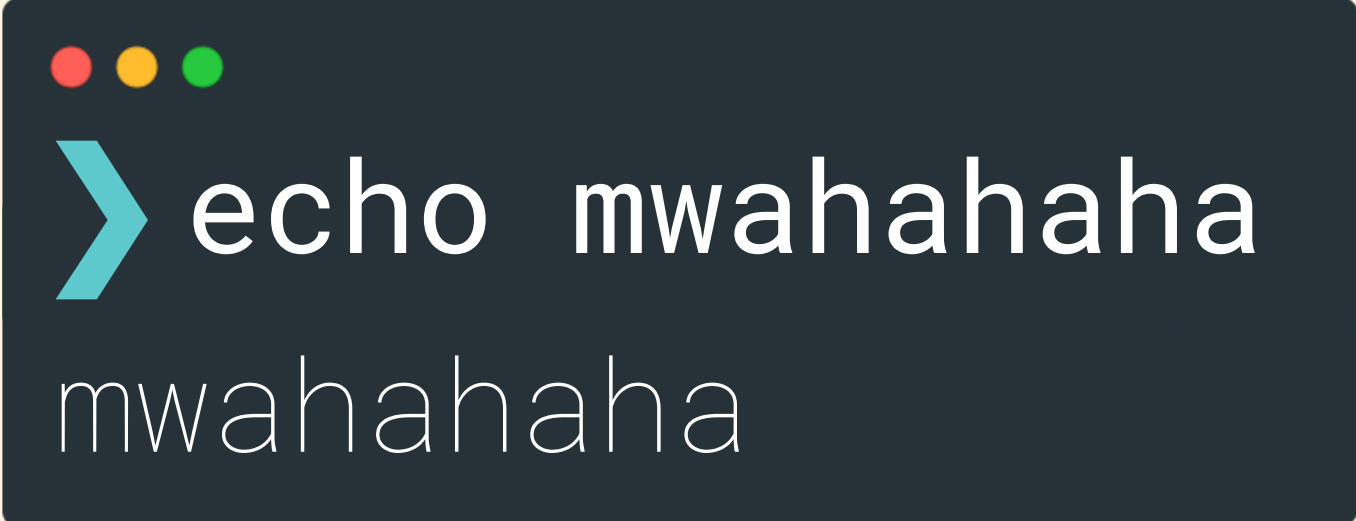




# Arguments

The terms "argument" and "parameter" are often used interchangeably to refer to values that we provide to commands.

The **echo** command is extremely simple. It takes the arguments we provide to it and prints them out. It echoes them back at us.

A dark-themed terminal window with three colored window control buttons (red, yellow, green) in the top-left corner. It shows a prompt character (a light blue chevron) followed by the command 'echo mwahahaha' on the first line, and the output 'mwahahaha' on the second line.

```
> echo mwahahaha  
mwahahaha
```







# Arguments

The ncal command accepts values to control the specific month(s) and year it displays.

If we specify only a year, ncal will print out the calendar for that entire year.

If we specify a month and a year, ncal will print only that month's calendar.

  
 `ncal 2021`  
 `ncal 1999`  
 `ncal july 1969`



# Arguments

The **sort** command, which we will cover in depth later, accepts a filename. It prints out the sorted contents of that file.

For example, **sort colors.txt** prints out each line of the colors.txt file, sorted in alphabetical order.

A dark-themed terminal window with three colored window control buttons (red, yellow, green) at the top left. It shows a command prompt followed by the command 'sort colors.txt' and its output, which is a list of colors sorted alphabetically.

```
>sort colors.txt
blue
green
indigo
orange
red
violet
yellow
```





 command argument

The specifics don't matter.  
Focus on the **PATTERN**.





# Options

Each command typically supports a host of options that we can choose to use when executing the command. These options modify the behavior of the command in predefined ways.

Options are prefixed by a dash, as in `-h` or `-3`.



```
>command -option
```



```
>nca1 -j
```



```
>sort -r colors.txt
```





Please do not worry  
about remembering  
any of these options  
I'm about to show you.

# Options

By default, the `ncal` command highlights today's date in the output.

```
ncal
      October 2021
Su      3 10 17 24 31
Mo      4 11 18 25
Tu      5 12 19 26
We      6 13 20 27
Th      7 14 21 28
Fr     1  8 15 22 29
Sa     2  9 16 23 30
```

We can provide the `-h option` to turn off the highlighting of today's date.

```
ncal -h
      October 2021
Su      3 10 17 24 31
Mo      4 11 18 25
Tu      5 12 19 26
We      6 13 20 27
Th      7 14 21 28
Fr     1  8 15 22 29
Sa     2  9 16 23 30
```



# Case Matters



```
> ncal -b
```



```
> ncal -B
```



# ≡ More Options

The **-j option** tells ncal to display a calendar using Julian days (days are numbered starting from jan 1st)

```
> ncal -j
```

|    | October 2021 |     |     |     |         |
|----|--------------|-----|-----|-----|---------|
| Su |              | 276 | 283 | 290 | 297 304 |
| Mo |              | 277 | 284 | 291 | 298     |
| Tu |              | 278 | 285 | 292 | 299     |
| We |              | 279 | 286 | 293 | 300     |
| Th |              | 280 | 287 | 294 | 301     |
| Fr | 274          | 281 | 288 | 295 | 302     |
| Sa | 275          | 282 | 289 | 296 | 303     |

We can provide the **-M option** to tell ncal to use Monday as the first day of the week instead of Sunday.

```
> ncal -M
```

|    | October 2021 |    |    |    |    |
|----|--------------|----|----|----|----|
| Mo |              | 4  | 11 | 18 | 25 |
| Tu |              | 5  | 12 | 19 | 26 |
| We |              | 6  | 13 | 20 | 27 |
| Th |              | 7  | 14 | 21 | 28 |
| Fr | 1            | 8  | 15 | 22 | 29 |
| Sa | 2            | 9  | 16 | 23 | 30 |
| Su | 3            | 10 | 17 | 24 | 31 |





# More Options

The **-3 option** tells ncal to display the previous, current, and next month



**> ncal -3**

|    | September 2021 |    |    |    |    | October 2021 |   |    |    |    | November 2021 |   |    |    |    |    |
|----|----------------|----|----|----|----|--------------|---|----|----|----|---------------|---|----|----|----|----|
| Su |                | 5  | 12 | 19 | 26 |              | 3 | 10 | 17 | 24 | 31            |   | 7  | 14 | 21 | 28 |
| Mo |                | 6  | 13 | 20 | 27 |              | 4 | 11 | 18 | 25 |               | 1 | 8  | 15 | 22 | 29 |
| Tu |                | 7  | 14 | 21 | 28 |              | 5 | 12 | 19 | 26 |               | 2 | 9  | 16 | 23 | 30 |
| We | 1              | 8  | 15 | 22 | 29 |              | 6 | 13 | 20 | 27 |               | 3 | 10 | 17 | 24 |    |
| Th | 2              | 9  | 16 | 23 | 30 |              | 7 | 14 | 21 | 28 |               | 4 | 11 | 18 | 25 |    |
| Fr | 3              | 10 | 17 | 24 |    | 1            | 8 | 15 | 22 | 29 |               | 5 | 12 | 19 | 26 |    |
| Sa | 4              | 11 | 18 | 25 |    | 2            | 9 | 16 | 23 | 30 |               | 6 | 13 | 20 | 27 |    |

# Combining Options

We can provide multiple options at once. This example uses the **-3** option to display the previous, current, and next month AND the **-h** option to turn off the highlighting of the current date.



```
> ncal -3 -h
```

|    | September 2021 | October 2021  | November 2021 |
|----|----------------|---------------|---------------|
| Su | 5 12 19 26     | 3 10 17 24 31 | 7 14 21 28    |
| Mo | 6 13 20 27     | 4 11 18 25    | 1 8 15 22 29  |
| Tu | 7 14 21 28     | 5 12 19 26    | 2 9 16 23 30  |
| We | 1 8 15 22 29   | 6 13 20 27    | 3 10 17 24    |
| Th | 2 9 16 23 30   | 7 14 21 28    | 4 11 18 25    |
| Fr | 3 10 17 24     | 1 8 15 22 29  | 5 12 19 26    |
| Sa | 4 11 18 25     | 2 9 16 23 30  | 6 13 20 27    |

# Another Syntax

When we provide multiple options to a single command, we can use a shorter syntax where we only need a single dash (-) character



```
> ncal -3h
```

|    | September 2021 | October 2021  | November 2021 |
|----|----------------|---------------|---------------|
| Su | 5 12 19 26     | 3 10 17 24 31 | 7 14 21 28    |
| Mo | 6 13 20 27     | 4 11 18 25    | 1 8 15 22 29  |
| Tu | 7 14 21 28     | 5 12 19 26    | 2 9 16 23 30  |
| We | 1 8 15 22 29   | 6 13 20 27    | 3 10 17 24    |
| Th | 2 9 16 23 30   | 7 14 21 28    | 4 11 18 25    |
| Fr | 3 10 17 24     | 1 8 15 22 29  | 5 12 19 26    |
| Sa | 4 11 18 25     | 2 9 16 23 30  | 6 13 20 27    |





# Long Form Options

All these short one-character options can get confusing! Some options also support equivalent long format options that are usually full words and are prefixed with two dashes instead of just one.

For example, the `date -u` option is used to print the date in Coordinated Universal Time (UTC). We can instead use `date --universal` to accomplish the same end result.

  
 `date -u`  
 `date --universal`



# Long Form Options

Here's another example using the sort command (which we have not really covered yet)

The `sort -r` option will sort a files contents in reverse. If we prefer, we can use the longer form `sort --reverse` to accomplish the same thing.



```
>sort -r colors.txt
```



```
>sort --reverse colors.txt
```





# Multiple Long Form Options

To use multiple long-form options in a single command, we must write them out separately with their own dashes (--). We cannot combine long-form options in the same way we can with single character options.



```
> sort --reverse --unique colors.txt
```



```
> sort -ru colors.txt
```



# Options With Parameters

Some options require us to pass in an additional value. For example, `ncal`'s **-A option** is used to display a certain number of months AFTER a specific date. We need to tell it how many months to display.

In this example, `ncal -A 1` prints out the current month (october) with one month afterwards (november)

Note: this can also be written as `ncal -A1` (no space between A and 1)

```
> ncal -A 1
```

|    | October 2021 |   |    |    |    |    | November 2021 |    |    |    |    |  |
|----|--------------|---|----|----|----|----|---------------|----|----|----|----|--|
| Su |              | 3 | 10 | 17 | 24 | 31 |               | 7  | 14 | 21 | 28 |  |
| Mo |              | 4 | 11 | 18 | 25 |    | 1             | 8  | 15 | 22 | 29 |  |
| Tu |              | 5 | 12 | 19 | 26 |    | 2             | 9  | 16 | 23 | 30 |  |
| We |              | 6 | 13 | 20 | 27 |    | 3             | 10 | 17 | 24 |    |  |
| Th |              | 7 | 14 | 21 | 28 |    | 4             | 11 | 18 | 25 |    |  |
| Fr | 1            | 8 | 15 | 22 | 29 |    | 5             | 12 | 19 | 26 |    |  |
| Sa | 2            | 9 | 16 | 23 | 30 |    | 6             | 13 | 20 | 27 |    |  |

# Options With Parameters

There is also a -B option to print a number of months BEFORE the specific date. We need to pass it a number of months.

In this example, **ncal -B2** prints out the current month (october) with the two previous months (august and september)

```
> ncal -B2
```

|    | August 2021   | September 2021 | October 2021  |
|----|---------------|----------------|---------------|
| Su | 1 8 15 22 29  | 5 12 19 26     | 3 10 17 24 31 |
| Mo | 2 9 16 23 30  | 6 13 20 27     | 4 11 18 25    |
| Tu | 3 10 17 24 31 | 7 14 21 28     | 5 12 19 26    |
| We | 4 11 18 25    | 1 8 15 22 29   | 6 13 20 27    |
| Th | 5 12 19 26    | 2 9 16 23 30   | 7 14 21 28    |
| Fr | 6 13 20 27    | 3 10 17 24     | 1 8 15 22 29  |
| Sa | 7 14 21 28    | 4 11 18 25     | 2 9 16 23 30  |



# Options With Parameters

This example uses both the -A and -B options to print out 1 month before the current month AND one month after.

```
> ncal -A1 -B1
```

|    | September 2021 | October 2021  | November 2021 |
|----|----------------|---------------|---------------|
| Su | 5 12 19 26     | 3 10 17 24 31 | 7 14 21 28    |
| Mo | 6 13 20 27     | 4 11 18 25    | 1 8 15 22 29  |
| Tu | 7 14 21 28     | 5 12 19 26    | 2 9 16 23 30  |
| We | 1 8 15 22 29   | 6 13 20 27    | 3 10 17 24    |
| Th | 2 9 16 23 30   | 7 14 21 28    | 4 11 18 25    |
| Fr | 3 10 17 24     | 1 8 15 22 29  | 5 12 19 26    |
| Sa | 4 11 18 25     | 2 9 16 23 30  | 6 13 20 27    |

# All Together Now

This example prints out the calendar for July 1969, with one month before (june) and two months after (august and september)



```
> ncal -B1 -A2 july 1969
```

|    | June 1969    | July 1969     | August 1969   | September 1969 |
|----|--------------|---------------|---------------|----------------|
| Su | 1 8 15 22 29 | 6 13 20 27    | 3 10 17 24 31 | 7 14 21 28     |
| Mo | 2 9 16 23 30 | 7 14 21 28    | 4 11 18 25    | 1 8 15 22 29   |
| Tu | 3 10 17 24   | 1 8 15 22 29  | 5 12 19 26    | 2 9 16 23 30   |
| We | 4 11 18 25   | 2 9 16 23 30  | 6 13 20 27    | 3 10 17 24     |
| Th | 5 12 19 26   | 3 10 17 24 31 | 7 14 21 28    | 4 11 18 25     |
| Fr | 6 13 20 27   | 4 11 18 25    | 1 8 15 22 29  | 5 12 19 26     |
| Sa | 7 14 21 28   | 5 12 19 26    | 2 9 16 23 30  | 6 13 20 27     |

Don't worry about  
remembering the  
specific options!

